

Eco Goes Retro: High School Junior Rebuilds Electric Car

By MARIBETH CONWAY

Barely old enough to hold a driver's license, Chad Conway can be seen zipping around town in his bright yellow, five-foot long, fully electric car, which he happened to rebuild himself.

A little over a year ago, Conway was looking to work on an old Mustang when his technology teacher Chris Connors made him an offer. "He said I could work on this 1980 electric car, with one condition – that I clean out one of the technology classrooms for space."

Conway has always been interested in cars; as a child he would design automobiles on paper and as a student at the high school he enrolled in the various technology classes such as electrical and mechanical engineering and computer aided design.

Though Conway may not have given electric cars or green technology much thought before, he heard his teacher's argument for environmentally friendly technology and the implications of rising gas prices and was hooked.

So Conway cleaned out that garage/classroom and moved in the tiny Comuta-car, also known as a Citicar.

About 2,000 to 3,000 Comuta-Cars were produced right before a major change in government vehicle safety regulations, leaving the Comuta-Cars non-compliant. So instead of a design overhaul, production of Comuta-Cars stopped altogether. The car is now "grandfathered in," Conway explained. As for the safety issues, Conway installed racing safety harnesses to hold passengers



Chad Conway picks up his electric car after it passed an inspection by Bennett Tire Co. owner Sam Elias.

back from the windshield and roll bar, both in dangerous proximity to the driver and passenger.

"The biggest problem was knowing where to start," said Conway of the rebuild. When he pulled off the dashboard he found an overwhelming tangle of colored wires. He came across an old manual for the car, which helped in understanding the complex wire system and he started small with the 12-volt system – meaning finding the wires that powered the wipers and lights.

"Next was getting the car to go," he said. Conway tackled the major 48-volt system with guidance from Connors and his father, Matt, who happens to be an electrician. The car rebuild was not a school project, so Conway spent many lunch periods and hours after school pulling the car apart and putting it back together.

Last summer he officially bought the car from his teacher for \$1,200 and moved it into his garage at home. After about nine months and \$1,000 in upgrades, such as new battery and a volt meter – which lets him know how much power he has left – the car is cruising the roads of Duxbury.

Conway can plug his car into any household outlet, giving him 30 to 60 miles on a single charge. Conway hasn't yet pushed the car to its limits, only driving about 20 to 30 miles on a single trip. His goal, typical of any teenager, is to drive to the mall and back. He is also hopeful he will find an electric outlet at the mall for a quick recharge.

Conway is hooked on the electric technology, anxiously



UNDER THE HOOD

Batteries: 8 Energizer 105 amp hour Golf Cart, 6.00 Volt

System Voltage: 48 Volts

Top Speed: 40 MPH

Acceleration: 0 to 25 - 6.2 seconds; 0 to 35 - 19 seconds

Range: 45 miles average per charge

Seating Capacity: 2 adults, however anyone over 6'2" is a little cramped in the vehicle

Curb Weight: 1,400 Pounds

Motor: General Electric 6.7 Series Wound DC

Drivetrain: Electric direct drive

Details provided through Chad Conway's website at chadconway.pbwiki.com

waiting for the Chevy Volt to hit the market as well as the cutting edge electric powered cars manufactured by Tesla Motors. He also has another ambitious rebuild in the works, he plans to purchase an antique car kit (a Factory Five reproduction) and install an electric powered engine.

"Environmentalism will hopefully catch on, and not be just a hippie thing but just a thing that's around."